

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference pf-3295		FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/JP2004/010972		International filing date (day/month/year) 30.07.2004		Priority date (day/month/year) 31.07.2003
International Patent Classification (IPC) or national classification and IPC G 0 1 S 5 / 1 4 , H 0 4 Q 7 / 3 4				
Applicant NEC CORPORATION				

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																	
<p>4. This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td><input checked="" type="checkbox"/> Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/> Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/> Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/> Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/> Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/> Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>		<input checked="" type="checkbox"/> Box No. I	Basis of the report	<input type="checkbox"/> Box No. II	Priority	<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input checked="" type="checkbox"/> Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/> Box No. VI	Certain documents cited	<input type="checkbox"/> Box No. VII	Certain defects in the international application	<input type="checkbox"/> Box No. VIII	Certain observations on the international application
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I	Basis of the report
1.	<p>With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This report is based on translations from the original language into the following _____ which is the language of a translation furnished for the purposes of:</p> <p><input type="checkbox"/> international search (Rule 12.3 and 23.1(b))</p> <p><input type="checkbox"/> publication of the international application (Rule 12.4)</p> <p><input type="checkbox"/> international preliminary examination (Rule 55.2 and/or 55.3)</p>
2.	<p>With regard to the elements of the international application, this report is based on <i>(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)</i>:</p> <p><input checked="" type="checkbox"/> the international application as originally filed/furnished</p> <p><input type="checkbox"/> the description:</p> <p>pages _____ as originally filed/furnished</p> <p>pages* _____ received by this Authority on _____</p> <p>pages* _____ received by this Authority on _____</p> <p><input type="checkbox"/> the claims:</p> <p>nos. _____ as originally filed/furnished</p> <p>nos.* _____ as amended (together with any statement) under Article 19</p> <p>nos.* _____ received by this Authority on _____</p> <p>nos.* _____ received by this Authority on _____</p> <p><input type="checkbox"/> the drawings:</p> <p>sheets _____ as originally filed/furnished</p> <p>sheets* _____ received by this Authority on _____</p> <p>sheets* _____ received by this Authority on _____</p> <p><input type="checkbox"/> a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.</p>
3.	<p><input type="checkbox"/> The amendments have resulted in the cancellation of:</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (<i>specify</i>): _____</p>
4.	<p><input type="checkbox"/> This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).</p> <p><input type="checkbox"/> the description, pages _____</p> <p><input type="checkbox"/> the claims, nos. _____</p> <p><input type="checkbox"/> the drawings, sheets/figs _____</p> <p><input type="checkbox"/> the sequence listing (<i>specify</i>): _____</p> <p><input type="checkbox"/> any table(s) related to sequence listing (<i>specify</i>): _____</p>

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ neither restricted the claims nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is:
- ☐ complied with.
 - ☒ not complied with for the following reasons:

The feature common to the inventions of claims 1-144 is a terminal position identification method and system thereof which identifies the geographical position of a radio terminal by sending and receiving signals between two radio stations with known geographical positions which are different and a radio terminal whose geographical position is unknown, wherein the propagation times of the radio signals between the two radio stations and the radio terminal are used to draw two curves, and the points of intersection of these two curves are used as two candidate points for the geographical position of the radio terminal. However, as described in documents JP 3323206 B2 (Motorola Inc.), JP 2000-244968 A (Lucent Technologies Inc.), and WO 02/25308 A1 (Koninklijke Philips Electronics N.V.), this feature clearly lacks novelty, and does not make a contribution over prior art, and cannot therefore not be considered as a (continued in Supplemental Box)

4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-6, 73-78

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	5, 6, 77, 78	YES
	Claims	1-4, 73-76	NO
Inventive step (IS)	Claims		YES
	Claims	1-6, 73-78	NO
Industrial applicability (IA)	Claims	1-6, 73-78	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 3323206 B2 (Motorola Inc.), 28 June 2002, paragraph 11, left column, lines 5 to 28; fig. 12 & WO 98/10306 A1 & US 5945948 A & GB 2332112 A & FR 2753035 A1

Document 2: JP 10-257545 A (Sony Corporation), 25 September 1998, paragraphs [0018] to [0037]; fig. 2, 4 & US 6101391 A

Document 3: JP 2000-244968 A (Lucent Technologies Inc.), 8 September 2000, paragraphs [0034] and [0035]; fig. 7 & EP 1030531 A1

Document 4: WO 02/25308 A1 (Koninklijke Philips Electronics N.V.), 28 March 2002, page 9, lines 10 to 25; fig. 3 & JP 2004-510364 A & US 2002/52208 A1 & EP 1325348 A1

Document 5: JP 2003-518632 A (Qualcomm Inc.), 10 June 2003, paragraphs [0018] and [0019]; fig. 5 and 6 & WO 01/48506 A2 & US 6289280 B1 & EP 1252532 A2

The inventions set forth in claims 1, 2, 4, 73, 74 and 76 lack novelty and do not involve an inventive step in the light of documents 1 or 2 cited in the international search report.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

Document 1 indicates that two circles are drawn using the propagation time of a radio signal, and taking the two points at which the circles intersect as candidate points for the terminal position, the candidate point which is contained within beams which can be operated by the radio station is specified as the terminal position. Document 2 indicates that two circles are drawn using the propagation times of radio signals, and taking the two points at which the circles intersect as candidate points for the terminal position, the candidate point which is contained within the service area of a sectorized radio station is specified as the terminal position.

The inventions set forth in claims 1, 3, 4, 73, 75 and 76 lack novelty and do not involve an inventive step in the light of documents 3 and 4 cited in the international search report.

Documents 3 and 4 indicate that the two points at which a circle obtained from propagation time of a radio signal and a hyperbolic curve intersect are taken as candidate points for terminal position, and one candidate point is specified as the terminal position based on the sector information of the radio station.

The inventions set forth in claims 5, 6, 77 and 78 do not involve an inventive step in the light of documents 1 to 5 cited in the international search report.

Document 5 indicates that terminal position is specified using a GPS satellite and base station of a mobile communication network. It would be easy for a person skilled in the art to employ the feature set forth in document 5 in one of the inventions set forth in

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

documents 1 to 4.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

(Continued from Box IV.3)

special technical feature. Therefore there is no feature common to all of the features of claims 1 to 144.

Therefore the inventions set forth in claims 1 to 144 do not satisfy the requirement of unity of invention.

The inventions of claims 1-6, 73-78 relate to a technique wherein the communication range of the radio stations is specified, and one of the two candidate points which is included in the communication range of the radio station is identified as the position of the radio terminal.

On the other hand, the inventions of claims 7-12, 79-84 relate to position identification by comparing the direction of a straight line connecting the candidate point and the radio station to the incoming direction; the inventions of claims 13-18, 85-90 relate to position identification by comparing the difference of incoming angles and each of the candidate angles; the inventions of claims 19-24, 91-96 relate to position identification by comparing the electric field intensity to the received electric field intensity information; the inventions of claims 25-30, 97-102 relate to position identification by comparing the propagation state to the propagation state information; the inventions of claims 31-36, 103-108 relate to position identification by comparing the earth magnetism to the earth magnetism information; the inventions of claims 37-42, 109-114 relate to position identification for specifying the other as the position of the radio terminal when the geographical position is a

Supplemental Box

position where the radio terminal cannot exist; the inventions of claims 43-48, 115-120 relate to position identification by comparing the measured altitude to the altitude information on the candidate point; the inventions of claims 49-54, 121-126 relate to position identification by comparing each of the candidate points to the measurement history information; the inventions of claims 55-60, 127-132 relate to position identification by comparing the geographical position of the radio terminal to the candidate point; the inventions of claims 61-66, 133-138 relate to position identification by comparing the external view imaged to the external view information on the radio station; and the inventions of claims 67-72, 139-144 relate to position identification of the radio terminal by estimating the effect of shielding by a building and using the signal reception state from the radio station.